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ABSTRACT

Writing development in preschool children has only recently begun to receive attention; however, Russian researchers dealt with the subject in the 1920s and 30s. Arguing that writing was a fundamental assist to cognitive growth as well as a tool for communication, Lev Vygotsky believed that the preschool child was ready to be taught writing. Alexander Luria's view of writing as a culturally mediated function of the individual served as an assumptive base in shaping his methodology for soliciting data from children. Results of his research suggested that the writing development process in young children is a general progression (albeit one with periods of plateau and regression) from a first undifferentiated phase to and through pictography to a final stage of ideography where the child understands and exploits the symbolic potential of language. According to Luria, such development is analogous to other cultural developments. His evidence that considerable learning potential remains unexploited in preschool children should lead us to reexamine some of our assumptions about when and how to begin writing instruction with children. His findings could also be useful for the work currently being done in metalinguistic awareness studies. (JL)

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"THE DEVELOPMENT OF WRITING IN THE YOUNG CHILD: SOME VINTAGE RUSSIAN WINE IN CONTEMPORARY BOTTLES"

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There are few people interested in the education of young children who are unaware of the current major interest in writing development in children. Even cursory examination of professional journals in education reveals an increasing proportion of time being devoted to articles, both theoretical and practical, about writing and children doing it. If we look at research in this area, we discover the same thing, an increasing proportion of the research in language arts is being devoted to writing development in children.

Although it is difficult to identify all of the reasons for this somewhat sudden emergence of interest, a few things appear conspicuous. Results of the National Assessment of Educational Progress in the mid-seventies in writing assessment disturbed us. We discovered that if there were significant problems in reading in this country, they were matched, if not surpassed, by those in writing. The then U.S. Office of Education certainly noticed and built writing skills into their expanded definition of literacy in the new Division of Basic Skills in that agency.

During the same period of time, research in sentence-combining turned out to be the first action-oriented research to offer encouragement to teachers suggesting there were specific instructional activities which could lead to enhanced sentence writing skills.

And, for those of us interested in writing development in the early grades, the telling case study work reported by Donald Graves beginning in 1975 provided interesting insights and possible new directions for the study

of writing behaviors in primary grades children.

Since Graves first reported his findings in 1975, there has been a steadily increasing consideration of the writing behavior of children in the early grades as well as through the elementary and secondary school years.

However, an area of interest just beginning to receive any significant attention is that of writing development in pre-school children. What is their conception of "writing"? Aside from the mechanics of producing written expression, what are some of the cognitively related changes which occur in young children's approach to the task of writing? When and how do they come to actualize its ultimate abstract and symbolic character? These and similar questions are beginning to attract the attention of those in early childhood education and in allied disciplines.

Of considerable interest, as well as irony, is that these are the kinds of questions pursued in the 1920's by Russian developmentalists, Lev Vygotsky and Alexander Luria. Vygotsky's Thought and Language, with his intriguing and insightful study of the concept of inner speech, is well known to many people in the fields of education and psychology. However, Mind and Society, a translation of additional Vygotsky work completed in the 1920's and early 30's prior to his premature death in 1934, was published only in 1978, and it is less well known. It is in this latter work that Vygotsky addresses the two significant areas of play and writing in the early years of the child with a number of suggestions for their place in the early education of the child.

His student and later colleague, Alexander Luria, using Vygotsky's underlying theories and rationale, pursued the study of writing development in children ages three to nine years during this same period of time with results which could well presage findings of studies we are likely to see in this country during the next decade; and more importantly, with findings that deserve immediate careful consideration by those of us interested in the education of young children, especially those from three to nine years of age.

Vygotsky argued in a very persuasive fashion that writing was a fundamental assist to cognitive growth as well as a tool for communication. The act of writing and its attendant demands on ones abstracting and symbolizing abilities was to Vygotsky a natural extension of play which served as sort of a preliterate precursor to the more demanding skills of writing. In the evolution of play one can see the child transfer reality from the object world of a hobby horse in the form of a stick with head and tail, to the more abstract representation of reality in a broom stick which might be adopted to replace the broken or lost object, hobby horse. The child moves from object reality to symbolic reality out of necessity in these varying acts of play. This evolution may be seen as a critical first step in the development of a more refined metalinguistic sensitivity which many developmentalists and reading authorities argue is fundamental to the development of the more abstract skills of literacy in reading and writing. (Downing, et al.)

Vygotsky argues that with this fundamental symbolizing potential, the preschool child is quite ready to learn to write, and given the importance of

the writing act as cognitive assist, probably should be taught to write.

> ...from our point of view, it would be natural to transfer the teaching of writing to the preschool years. Indeed, if younger children are capable of discovering the symbolic function of writing, as Hetzer's experiments have shown, then the teaching of writing should be made the responsibility of preschool education.
>
> (Vygotsky 1978, p. 116)

It was, however, Alexander Luria who, via imaginative descriptive research, provides us with very specific understandings of what children do and go through in the development of written expression, and, more importantly, he shows us that young children do grasp the symbolic functions of writing sooner than we often realize.

Luria begins with the assumption that writing, as is reading, is a culturally mediated function of the individual. We are literally bombarded with language, its production and consumption long before we enter school. Luria's contention gathers support in contemporary research by Harste, et al., in the study of children's perceptions of reading and writing as fundamental language acts. Their work reveals that as early as three years of age children know how writing is supposed to look, that it moves from top to bottom, that it moves from left to right in the English language, and that its primary function is to communicate information. (Carey and Harste, unpublished paper)

Luria asserts that since writing is a culturally based and mediated act, it is reasonable to assume that particular aspects of its development may correspond with features of cultural development as they have shaped our

beliefs and behaviors over time. To some extent, this Lurian view may have been derived from political necessity in post-Bolshevik Revolution Russia. Practically, however, it was to serve as a reasonable assumptive base in shaping his methodology for soliciting data from children, for it established a perception of writing development as a process with a "pre-history" and an evolutionary character not unlike that of other social and cultural phenomena. Hence, writings underlying cognitive ties are as critical as its more mechanistic observable features. The character of our developing sense of cultural functions and acts then applies to writing and its uses as well as to the wide range of other cultural factors we must deal with. Writing, in some senses, is simply another element in the range of cultural agencies, institutions, features, etc. which the individual must accommodate in the evolving processes of social cognition.

As cultures go through stages of development, so too do children in the development of written expression. Luria's work elaborates those stages, their characteristics and their importance for the child.

The ability to write presupposes that the child is already capable of differentiating relations between the various elements of the object world. The child must be able to utilize various social "tools" to do this differentiating. Initially the child relies on physical objects to serve in this differentiating role; toys, sticks, and other material objects. This prehistory period of crude differentiating gives way to the more highly refined social instruments of play and language to achieve the same purposes. The ultimate critical discovery for the child, of course, is that language, as an auxiliary device, has the symbolizing and

abstracting potential to transcend time and space as well as material reality. Once this discovery is made then writing can flourish.

Luria's search for insights into how and when the transition from prehistory to writing takes place was governed by an experimental methodology which presupposed this evolutionary character in the acquisition of the writing act as a symbolizing and mediating one divorced from the material events being represented. He further assumed that the easiest way to proceed was to ask the child to remember a series of sentences and/or phrases and clauses by utilizing paper and pencil. When responding, as they often did, that they couldn't write, the children were encouraged to use the provided materials in any way that would help them remember.

Children were presented with six or eight sentences, (also phrases and clauses), usually short, simple and unrelated, and they were asked to remember them. Luria then carefully analyzed responses to the task by children from three to nine years of age.

Initial work with 3-4-5 year olds suggested that most of these children did not perceive writing as a mediating act of any kind. Many grasped its outward forms with some sense of how adults do it. Some could even do a reasonable job ot imitating adult writing. However, for most, it was purely imitative and nonmediated. For example, Vova (5 years old) in response to the request to remember and write down, "Mice have long tails" made a number of scrawls as in Figure 1, and responded, "That's how you write."

Figure 1

In fact, many children at this stage simply began scrawling figures or lines before instructions were given and/or continued after the experiment was completed. Further, when asked to use the scrawls as a mnemonic device, they couldn't do it. The "writing" served no instrumental or functional role. This was the case even for most kindergarten children. They love to scribble simply for fun in this sort of task but fail to grasp the instrumental potential of writing as a linguistic tool. Indeed, in some senses, we can observe that those children, most of whom were obviously linguistically aware with their oral language, possibly even possessing metalinguistic awareness, did <u>not</u> reflect linguistic awareness in their written expression.

Luria refers to this first stage as the Prewriting Phase or the Pre-Instrumental Phase. It can extend for several years from ages three through five, but there are a number of dynamic factors which serve to

warn against making sharp or refined connections between age and stage in early writing development. Luria did note that when asked to write, children in this stage used scrawls in zigzag, straight line form, e.g.:

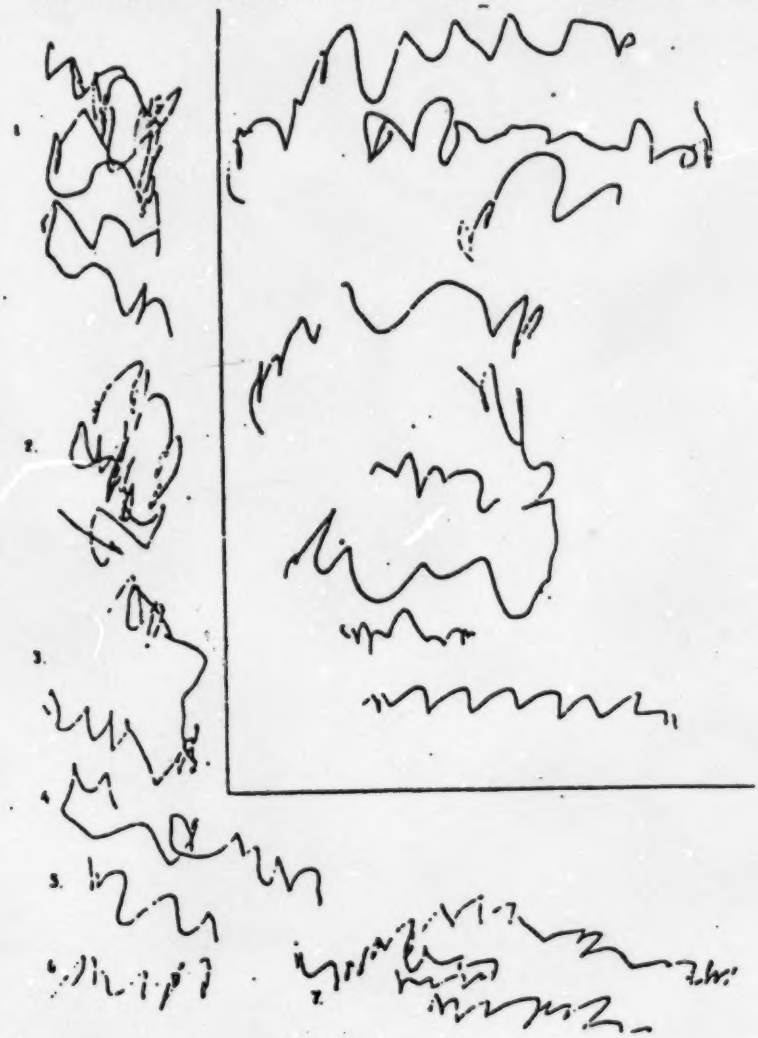
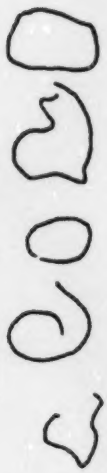


Figure 2

When asked to write with signs, the same child converted from marks which closely resemble adult writing (as in Figure 2) to marks such as the following,



... Monkeys have long tails.

... the dark night

... There is a tree in the yard.

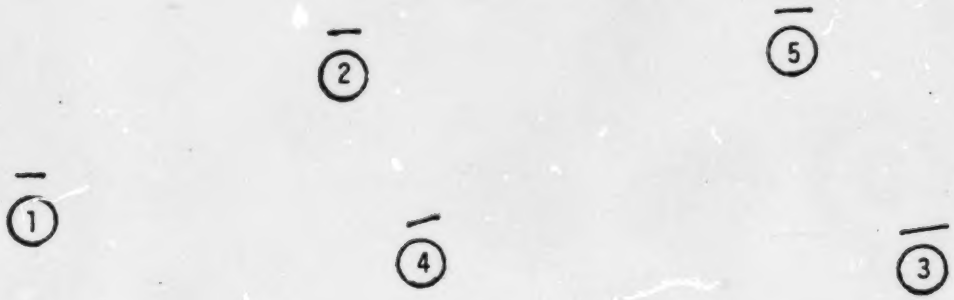
... Lyala has large eyes.

... a large apple

Despite uniqueness of form, Luria suggests examples such as these are not fundamentally different from those which outwardly appear to resemble more closely adult writing. The forms are random, undifferentiated and reflect no mnemonic potential. The child is unable to use these marks mnemonically as he was unable to use the other scrawls. In fact, in this stage, the child is often better able to recall the given information when he has attempted to write nothing. The writing attempts often interfere with retention of the information. And, when children do recall the information after writing, they do not use the scrawls on paper as cues. They often stare out of the window or at the ceiling indicating that the recall process was largely unrelated to any possible meaning retention cued by marks on paper. At most, children remembered only two or three sentences or phrases at this stage.

There are a few interesting surprises in Luria's work with this stage of writing development in children. There were some instances of children in the process of creating a mnemonic system with use of paper and pencil. Often this was done via spatial arrangement. For example, Brina (5 years) recorded: 1) cow, 2) A cow has legs and a tail, 3) Yesterday evening it

rained, 4) Chimney sweeps are black, and 5) Give me three candles:



Her writing too is undifferentiated, but her attempt to use it in a functional way by specific spatial design and placement of marks is clear. Luria, in fact, identifies this sort of activity as the first real form of "writing." It serves as an important assist to help the child organize thoughts even though the more abstract potential of writing remains undiscovered.

Progress to the second stage of writing development, the differentiating phase, comes when the child perceives some differentiation potential in the writing. This is reflected in two ways. The first is in an attempt to intentionally build in some outward correspondence between quantity and rhythm of the utterance and a preservation of that in the written expression. The child simply begins to show a tendency to write down given words or short phrases with short lines and longer words, phrases and/or sentences with longer lines or a larger number of scribbles. After three or four sessions many four and five year olds began to link given words or phrases with marks on the paper. The marks were seldom duplicated from one session to the next, however. In many instances also, the child would easily revert back to the nondifferentiated stage. When working, it was the

critical effect of the rhythm of the cues that prompted use of graphic signs rather than an explicit appreciation of their symbolizing character. Use of rhythm and length of utterance as mediator then is a rather impoverished method whose main value appears to be that of providing initial insights into the potential of scrawls as symbols which the child must explicitly grasp in order to write.

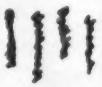
Perhaps the most dramatic discovery Luria made in his research came next. He discovered that utilization of number or quantification in language could serve as a powerful assist in moving the young child into the differentiated stage of written expression development. Luria asserts,

> By introducing the factor of number into the material, we could readily produce differentiated graphic activity in 4-5 year-old children by causing them to use signs to reflect this number. It is possible that the actual origins of writing are to be found in the need to record number, or quantity. (Luria 1978, p. 87)

For example, in a first session Brina (5 years) had five sentences dictated to her: 1) the bird is flying, 2) the elephant has a long trunk, 3) an automobile goes fast, 4) there are high waves on the sea, 5) the dog barks. The subject drew separate lines in columns but recalled only two of the sentences; the same number she recalled without attempting any use of pen and paper. In later sessions, she was given syntactic constructs with quantification, e.g. a man has two arms, the big dog has four pups, Brina has twenty teeth. By the fourth session, she could recall virtually all of the material,missing on only one if at all. Further, her written expression technique was altered to incorporate the quantification factor in some way, often by separate marks corresponding to the numbers given

in the phrase or sentence. For example, she represented, "A man has two arms and two legs" with two separate marks or lines.

This result was obtained in similar fashion from a wide range of subjects in Luria's work. For the first time then, the child intentionally employs written expression for mnemonic purposes. It thus serves an explicit symbolic role.

A second "stimulator" of differentiated graphic activity for mnemonic purpose is seen in protocols which employ color as modifier of key nominals. For example, "Very black smoke is coming from the chimney" or "The snow was very soft and white." In the "smoke" example children often drew heavy dark marks with comments such as, "Black. Like This!" In research presently being conducted by this author, similar results are being obtained where subjects will depict a sentence such as "The rain is falling on a very black evening," with separate heavy vertical lines, e.g. 

Ongoing commentary by the children during enterprises such as this clearly indicates that they are attempting to reflect in the form of their written expression the salient modification element or, in the case of quantification, the numbers.

The child preserves quantification by converting the scrawls or marks to numerical indicators. The child preserves modification-by-color by altering the intensity of the written form itself. In both techniques, the written expression serves a distinct mnemonic role for the child; the written expression performs a mediating function and facilitates recall. Both quantifica-

tion and form assume a critical role in moving the child to pictography as the final step before the child finally addresses the ideographic role of written language in symbolic form.

In some instances, the latter phase--picture writing--is extremely brief. As Luria states,

> The period of picture writing is fully developed by the time a child reaches the age of 5 or 6 years; if it is not fully and clearly developed by that time, it is only because it already begins to give way to symbolic alphabetic writing, which the child learns in school--and sometimes long before.
>
> (Luria, 1978, p. 98)

We can observe in Brina, for example, that her "two long vertical lines mark," originally used to mnemonically preserve "the man has two arms and two legs" is transferred to a variety of assertions where the number two is central. Later, she modifies the mark to accommodate a "one-legged crane." By this point, we may reasonably theorize that Brina is moving fairly rapidly from gross mediation attempts with written expression to pre-ideographic recognition of its symbolizing and abstracting potential; perhaps without the intermediate benefit from or, for that matter, need for, pictography!

Luria suggests that the limited role of pictography in the evolution of written expression may be largely attributable to its inherent richness of meaning and experience; a somewhat ironic twist. Drawing appears initially as an act of play with its own internal representation functions; perhaps, if you would, art functioning as art; a cohesive whole on its way to nowhere beyond what it concretely represents. It is a direct

experience so rich and expressively powerful that the child engrossed in its internal elements, finds it near impossible to pull away from that innate character in order to alter its role from that of directly representing reality to that of serving in a mediating role where it must be divested of direct personal meaning in order to assume symbolic functions. In other words, perhaps pictography is too fundamentally close to art to serve the needs of a related, but different, mode of representation--written expression.

Where pictographic writing was employed as a mnemonic device and in ways approaching symbolism, the child often reflected a strong ambivalence towards its employment. Many pre-schoolers would switch from pictographic expression back to spontaneous drawing. And, in Luria's view, the greater the pictographic and drawing abilities of the child, the greater the likelihood of the back and forth movement.

Luria's data strongly suggest, in fact, that throughout the writing development process there is a general progression from the first undifferentiated phase to and through pictography to the final stage of ideography where the child understands and exploits the symbolic potential of language. Writing development, however, does not progress in a consistent "straight line." Like other cultural phenomena there is plateauing for brief periods; there is backtracking; there is a "zippering" sort of movement where children appear, temporarily at least, to regress. As Luria puts it,

> Like any other cultural psychological function, the development of writing depends to a considerable extent on the writing techniques used and amounts essentially to the replacement of one such technique by another. Development in this case may be described as a gradual improvement in the process of writing, within the means of each technique, and sharp turning points marking a transition from one such technique to another. But the profound dialectical uniqueness of this process means that the transition to a new technique initially sets the process of writing back considerably, after which it then develops further at the new and higher level.
>
> (Luria, 1978, p. 106)

Luria's observations regarding the initial difficulty the child has in mastering the various facilities of the differentiated stage of writing development in many senses, serve as precursors to later, in fact much more recent, research into the acquisition and attendant complexities of metalinguistic awareness. For example, Vasya G., a 6 year old boy who was a typical respondent, knew the individual letters, A and I. When asked to remember and write some dictated sentences he easily employed the letters he knew, but quite arbitrarily it turns out. For when asked to read the sentences back, he simply read the letters A and I as he had used them.

The child at this stage relates quite externally to writing as a mediating process. Understanding of the mechanisms of writing takes place after the outward mastery of those behaviors many of us would accept as performance indicators of one's knowledge of writing. The child understands that he can use signs to write with before he understands how to use them.

Luria cites this as an example of that temporary regression mentioned earlier. The child in the first stage of the development of symbolic alphabetic

writing often reverts back to undifferentiated use of those prospective "signs."

Luria observed such behavior in children as old as 9 years of age. Vanya Z., a village boy, for example, simply employed "v's," "u's," and "y's" rather arbitrarily to record a variety of unrelated assertions. He recalled very few. In experiments designed to pursue on this idea, Luria asked children who knew how to write letters to write dictated ideas with any marks desired; however, they were forbidden to use letters. One very interesting result was that few reverted to pictography. Shura I., for example, simply used X's roughly approximating the syntactic/semantic elements of the dictated utterances:

- A cow has four legs and a tail. X X X

(Cow - four legs - tail (?))

- It rained yesterday evening. X X X

(It rained - yesterday - evening (?))

- House X

(Luria, 1978, p. 110)

The subject remembered only three of six ideas dictated and was completely unable to indicate any correspondence between marks made on paper and the ideas recalled.

In later experiments where the subject was asked not to use X's, a simplified pictography was employed initially:

1. Monkeys have long tails. (Makes two marks.)
2. There is a high column on the street. (Two marks.)
3. The night is dark. (Two marks.)
4. There is one bottle and two glasses. (I'll write down a bottle.)
5. One big dog and one small dog. (Makes two marks.)
6. Wood is thick. (I'll write down wood.)

Figure 3

And, even later (Session III), the subject ultimately moved from pictography to a crude form of arbitrary symbolic writing where a sign was used when pictographic means would not suffice. (Note assertions 5 & 6 and respondents' signs numbered 6 & 7).

1. There is a column.	(The subject draws something.)
2. The night is dark.	I'll put a circle for the night (draws filled-in circle).
3. The bird is flying.	(The subject draws something.)
4. Smoke is coming from the chimney.	I'll draw a house with smoke (draws).
5. The fish is swimming.	Fish...fish.... I'll draw a fish.
6. The girl wants to eat.	I'll draw a girl.... She wants to eat (makes a mark) — there it is — she wants to eat (Figure 13,6,7).

Figure 4

The beginning writer, according to Luria, assimilates experience through writing in a purely external fashion initially. Then the writer comes to recognize and utilize the powerful potential of writing as symbolic expressive behavior. And it is in this order of evolution that Luria finds critical significance. For, in Luria's words,

"It is not understanding that generates the act, but far more the act that gives birth to understanding--- indeed, the act often far precedes understanding."

(Luria, 1978, p. 113)

Prior to a conceptualization of writing as a symbolizing process with abstracting power, the child goes through an evolutionary prehistory of writing, which, though crude, exhibits every indication of contributing to the ultimate expressive facility which later appears.

Luria then argues that such development is analogous to other cultural developments, for writing evolves as do other institutions and other psychological facilities in the individual. And, just as the various other personal facilities assist us in developing, writing, too, assumes a critical role as social and cultural tool.

Although it is clear that additional research and validation of Luria's assumptive bases and findings need to be done, his contributions seem apparent.

First, Luria's work suggests that we need to re-examine in serious fashion our current postures about when and how to begin writing instruction with children. He offers persuasive evidence that considerable learning potential rests unexploited in pre-school children. Three, four and five year olds are already in the evolutionary process of writing development in literate societies, often long before many of us would have assumed.

Luria's elaboration of the writing stage evolvement from undifferentiated

to differentiated--with quantification and form representing potential instructional assists; and his insightful findings revealing the movement of the child within the differentiated stage of development from pictography to ideography could have dramatic implication for curriculum and instruction design during the formative years of pre-school and primary grades.

Further, the extensive work currently being done in metalinguistic awarenss studies could very well incorporate findings of Luria regarding the significant role that writing development plays in the evolution of that critical language capability. Certainly, any consideration of techniques, strategies, or materials which have instructional potential for enhancing metalinguistic sensitivity or awareness, ought not to be divorced from the character and potential of the writing act itself.

There are challenges to be found in Luria's research. Its very character requires that we re-examine our definition of writing. Is there a fundamental difference between writing-as-conceptual-act and writing-as-mechanical-performance? Exactly what are we teaching kindergarten and first grade children under the general rubric of "writing"? And in terms of instruction, how critical is fine motor-coordination to "writing"? Is "scribble" writing simply the imitated physical practice necessary for hand/eye coordination? Should cursive writing be taught as a natural evolutionary part of normal writing development? Does emphasis upon the process of mechanically forming letters and block printing in the primary grades intrude upon a natural acquisition of metalinguistic awareness most of us agree is critical for the child?

The questions could go on--perhaps should. One thing does seem clear. It is very difficult to examine Luria's work without wondering about the assumptions we make regarding children's acquisition of written expression and which underly our early language arts programs in the schools, not to mention pre-school programs.

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